



Energy Efficient Development

Model Ordinances

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The Project

- ⇒ A NHDES REPP project –

Innovative Land Use Planning Techniques:
A Handbook for Sustainable Development

- ⇒ Participation of all NH RPCs

- ⇒ Expected Publication – January 2007

The Product

- ⇒ Background and Purpose
- ⇒ Appropriate Circumstances
- ⇒ Legal Basis
- ⇒ Examples
- ⇒ Model Ordinance
- ⇒ References

Background

- ⇒ Building codes are a minimum
- ⇒ Efficiency can be achieved through:
 - Site Design
 - Building Design
- ⇒ Reduced energy consumption reduces:
 - Dependence on foreign oil
 - Environmental impacts
 - \$\$\$ costs

Appropriate Circumstances

- ⇒ Must be supported by the MASTER PLAN
- ⇒ Works best when:
 - There is an interested market
 - Energy costs have markedly increased

Legal Basis

- ⇒ RSA 674:17 I (j) – Zoning Ordinance
- ⇒ RSA RSA 674:36 II (k) – Subdivision Regulations
- ⇒ RSA RSA 674:44 II (i) – Site Plan Review
- ⇒ RSA 155-D – Requires Compliance with the State Energy Codes
- ⇒ RSA 155-A:2 VI – Permits more stringent codes

Examples

- ⇒ NO Energy Efficient Development Ordinances in NH
- ⇒ Other Examples and Models:
 - LEED
 - Energy Star
 - Burlington, VT

The Model

- ⇒ Site Plan and Subdivision Regulations
- ⇒ Building Code Regulations
- ⇒ Zoning Ordinance Article

Site Plan & Subdivision Regulations

⇒ Simplest to administer

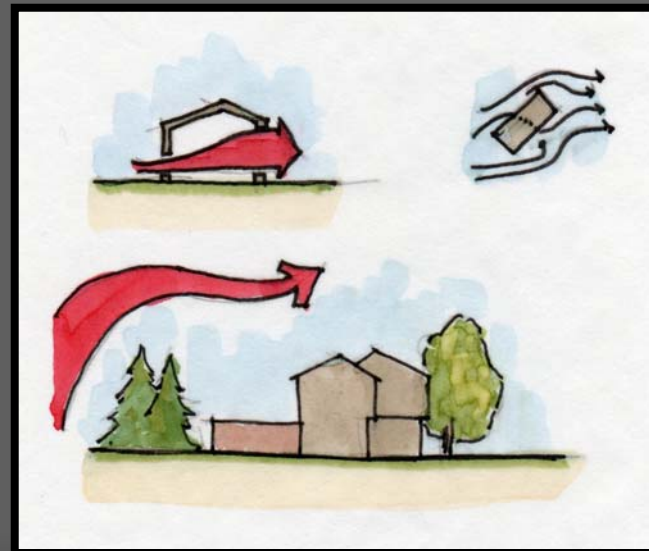
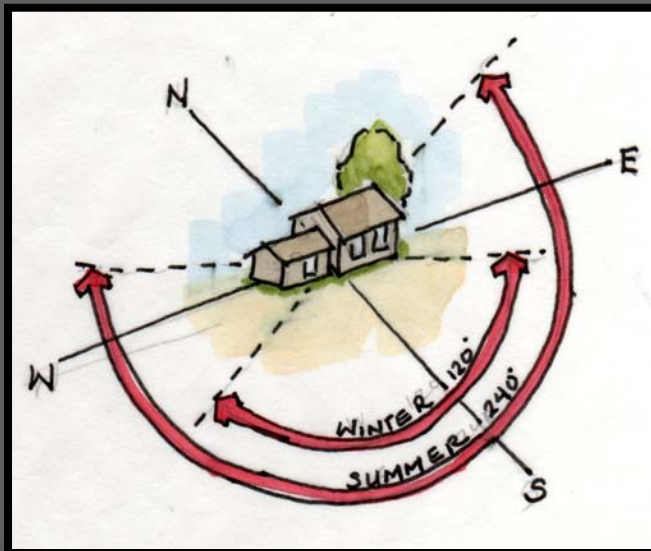
⇒ Six provisions related to:

- Building Orientation
- Building Design and Shading
- Landscaping

Site Plan & Subdivision Regulations

➔ Building Orientation

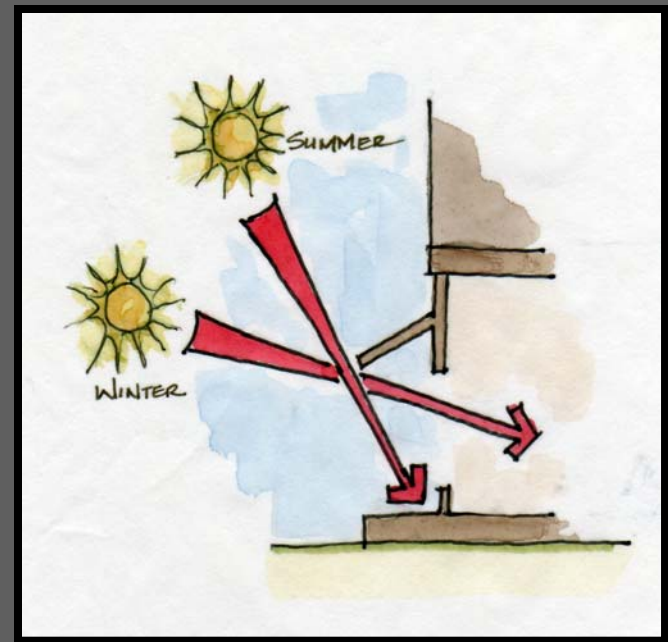
- Optimize passive solar opportunities
- Minimize wind loads



Site Plan & Subdivision Regulations

⇒ Building Design and Shading

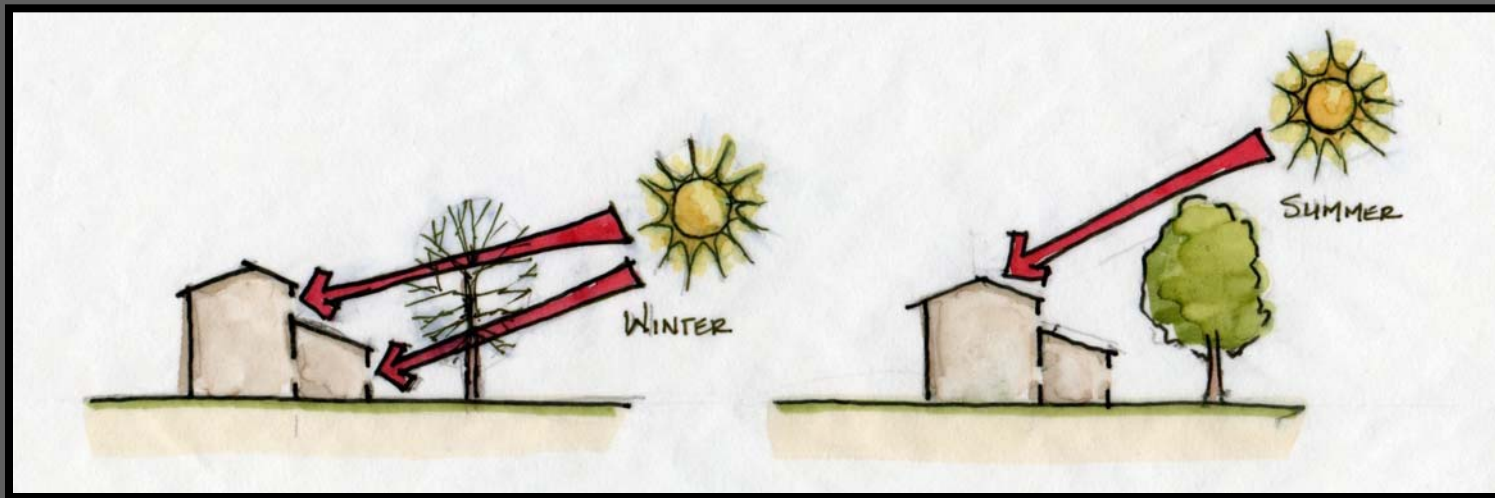
- Appropriate shading
- Calculated solar penetration
- Minimize pest infestation



Site Plan & Subdivision Regulations

⇒ Landscaping

- Provide shading & cooling in summer
- Environmentally sensitive



Building Codes

⇒ Adopted in addition to:

- IECC 2000 – residential
- ASHRAE 99 – commercial/industrial

⇒ Requirements:

- Building Inspector
- Code enforcement system

Building Codes

⇒ Standards Created For:

- All Buildings
- Residential Construction
- Commercial/Industrial Construction

Building Codes

⇒ Standards Related To:

- Envelop Performance
- Engineering and Design
- HVAC and Air Quality Performance
- Recycling

Building Codes – All Buildings

⇒ Sample standards:

- Recycle 50% construction debris
- Reuse existing/salvage materials
- Use durable/local materials
- Reduce the heat load
- Increase air ventilation rates

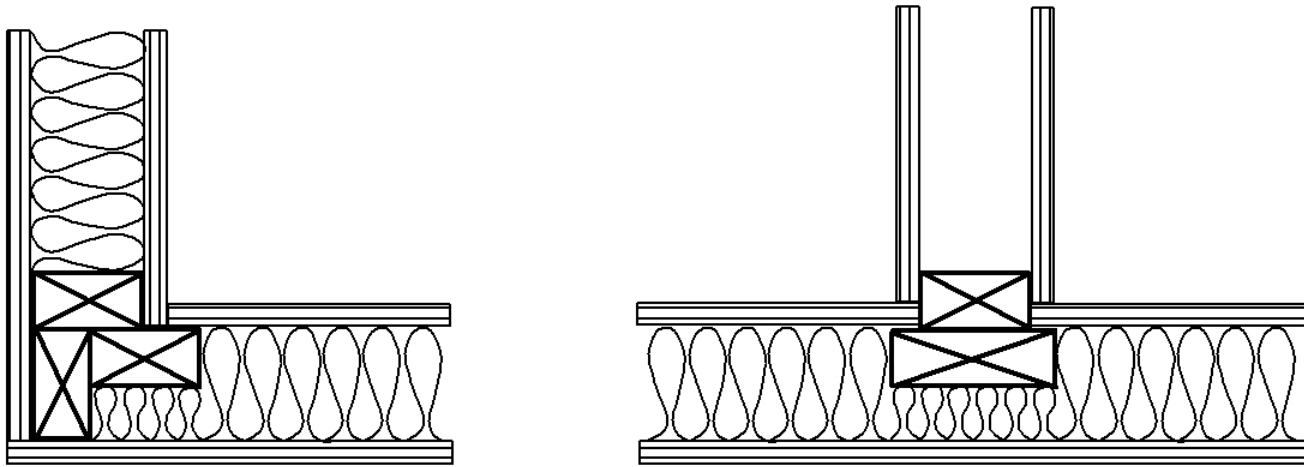
Building Codes – Residential

⇒ Sample standards:

- Bicycle storage
- Value-Engineered Framing
- Increased insulation R-values
- Insulated ductwork
- Compact design
- Increased ventilation

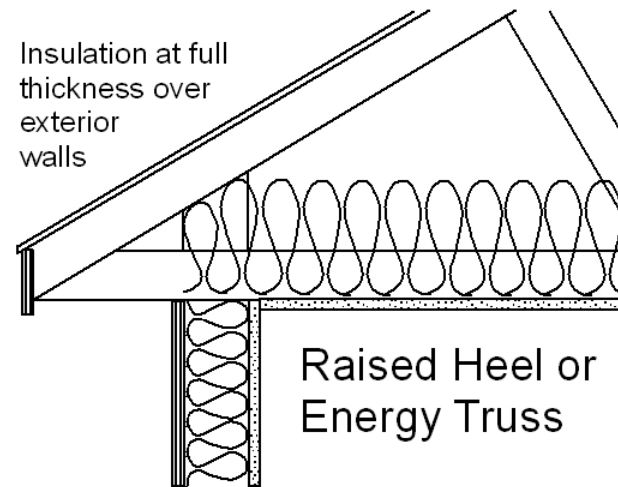
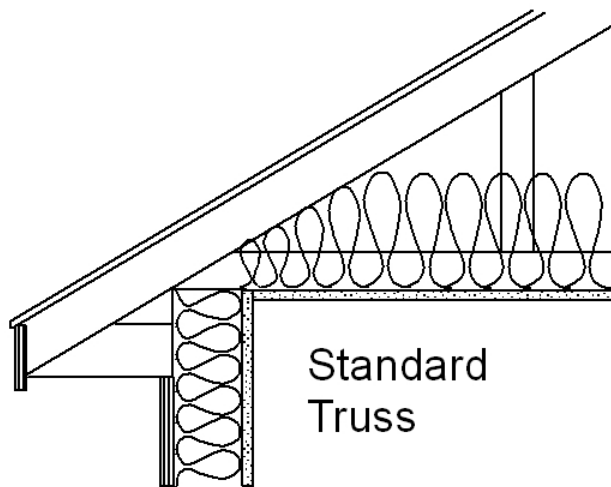
Value Engineered Framing

Value-Engineered Corner Framing



Value Engineered Framing

Roof Truss Insulation



Building Codes – Com/Ind

⇒ Sample standards:

- High-efficiency mechanical equip
- Increased insulation R-values 15%
- 15-20% improved building performance
- Minimum daylight for 75% of area
- Bicycle and shower facilities
- Increased HVAC and window standards

Zoning Ordinance Article

- ⇒ Complex to Administer
- ⇒ Utilizes Performance Zoning Incentives
- ⇒ Requires Third Party Verification of Conformance
- ⇒ Conditional Use Permit

Zoning Ordinance Article

- ⇒ Purpose, Authority, Applicability
- ⇒ Definitions
- ⇒ Conformance and Incentives
- ⇒ Energy Efficiency Standards
- ⇒ Certification of Compliance
- ⇒ Monitoring and Enforcement

Zoning Ordinance Article

⇒ Conformance and Incentives:

- Must implement 50% of standards
- Status as Energy Efficient Building
- Gain a 15% density bonus

Zoning Ordinance Article

- ➞ Energy Efficiency Standards for:
 - All Buildings
 - Residential Construction
 - Commercial/Industrial Construction
- ➞ Standards similar to Building Code

Zoning Ordinance Article

⇒ Certification of Compliance:

- Written independent confirmation
- No CO unless confirmed

⇒ Monitoring and Enforcement:

- Applications reviewed by PB
- Applicant/owner required to monitor and record performance

Alternatives

- ⇒ Require LEED or Energy Star
- ⇒ Non-regulatory approach:
 - Energy efficiency fact sheets for permit applicants



Thank you!

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